

# PDSF Users Meeting

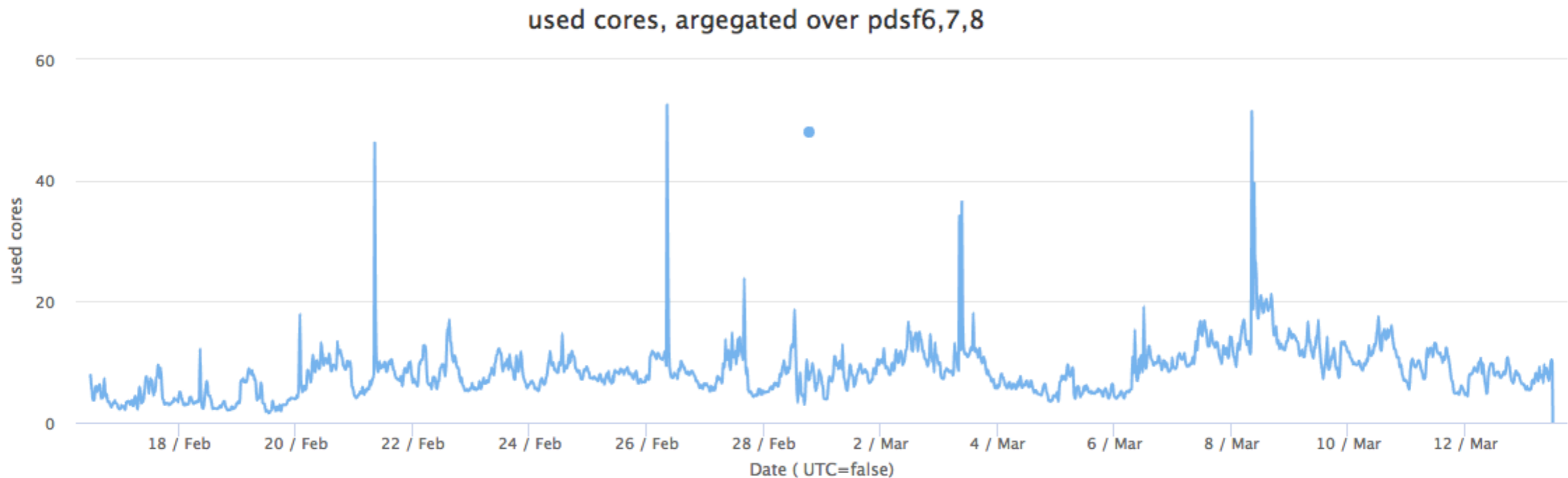
- \* PDSF performance
- \* announcements
- \* AOB

March 14, 2017

Jan Balewski

# aggregated load on PDSF interactive nodes

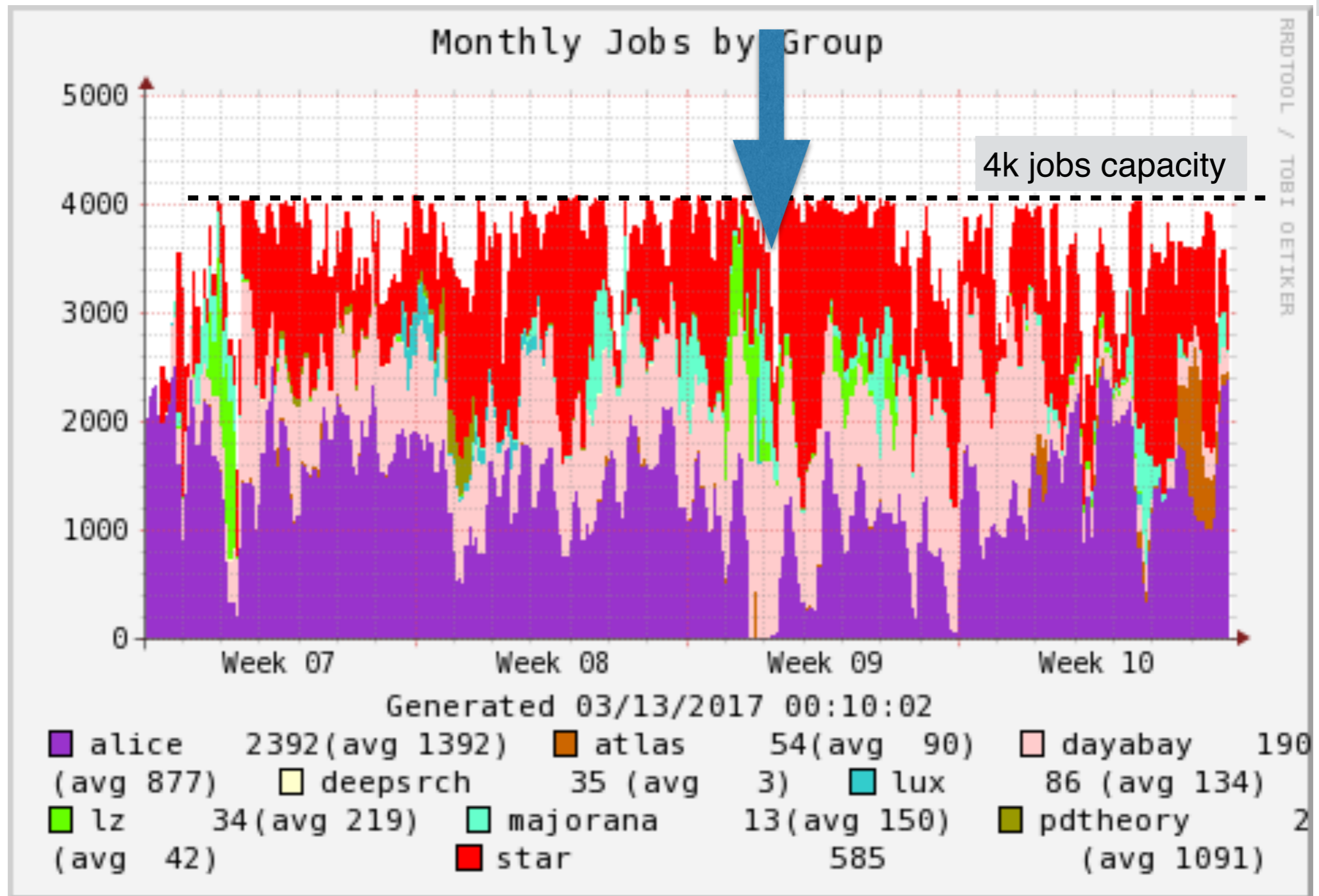
<https://portal-auth.nersc.gov/pdsf-mon/>



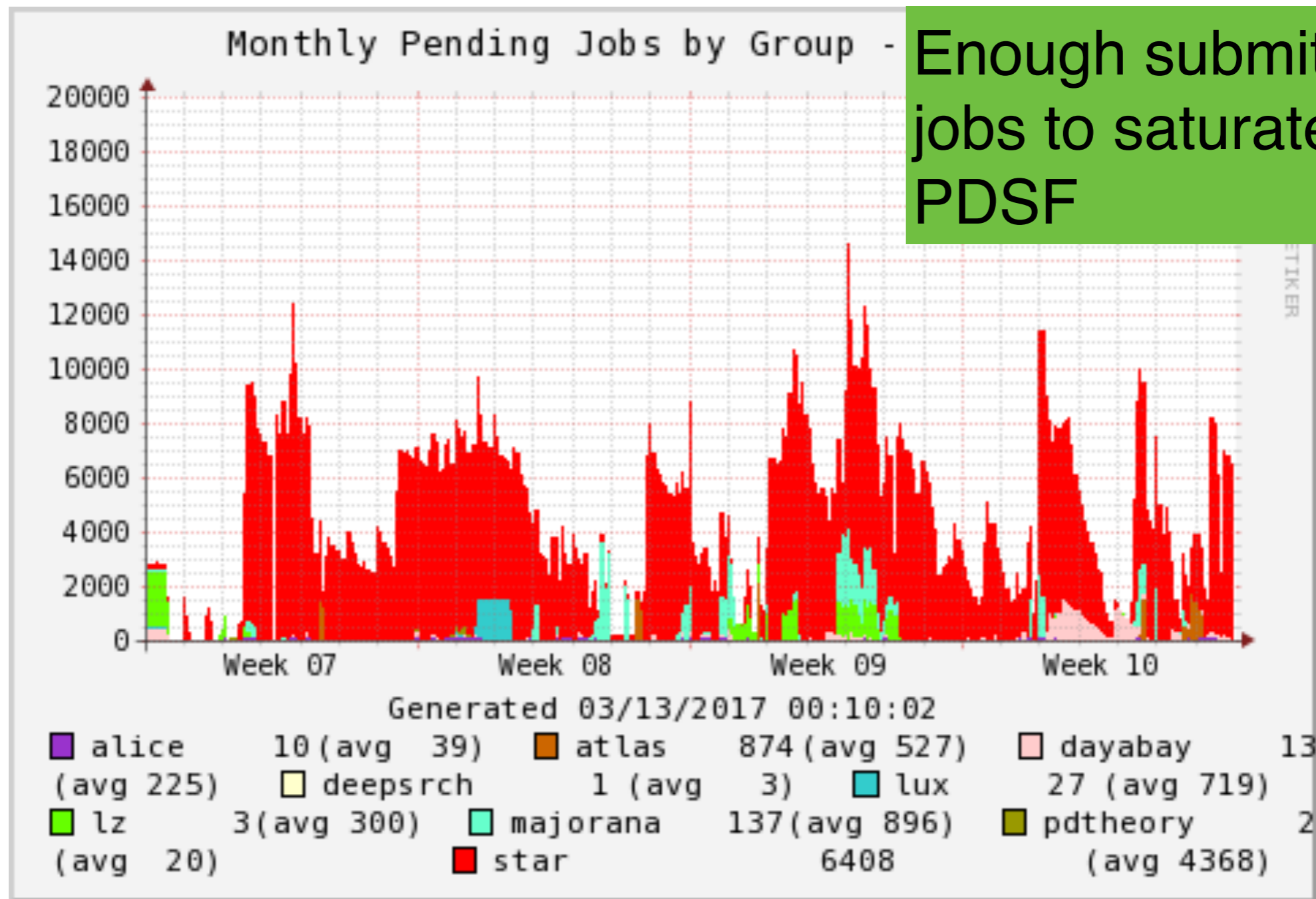
# CPU Utilization is not great

NERSC  
maintenance:

On Feb 28 all PDSF jobs (running and scheduled) have been lost.  
The underlying cause was a GPFS issue that we now believe we understand.



# UGE queue load



Enough submitted jobs to saturate PDSF

# Utilization of PDSF compute nodes

## March 14 Average

Served 3460 vCores

Capacity 4000 vCores

CPU utilization 0.71

## Feb 14

Served 2200 vCores

Capacity 3600 vCores

CPU utilization 0.85

end-time was set to 2017-03-13 12:01, DB collName=u

| user \ timeRange           | sum last 7_days  | sum last 30_days   |
|----------------------------|--|--|
| <b>0-all-users : owner</b> | 63.1 (cpu*year) , 352835 jobs<br>wallT fract=1.000, CPU eff=0.76 | 282.4 (cpu*year) , 1760555 jobs<br>wallT fract=1.000, CPU eff=0.71 |
| <b>alice : project</b>     | 27.7 (cpu*year) , 43419 jobs<br>wallT fract=0.439, CPU eff=0.86  | 114.1 (cpu*year) , 202731 jobs<br>wallT fract=0.404, CPU eff=0.82  |
| <b>atlas : project</b>     | 3.1 (cpu*year) , 18339 jobs<br>wallT fract=0.049, CPU eff=0.66   | 3.7 (cpu*year) , 110413 jobs<br>wallT fract=0.013, CPU eff=0.68    |
| <b>dayabay : project</b>   | 9.0 (cpu*year) , 12217 jobs<br>wallT fract=0.143, CPU eff=0.16   | 63.8 (cpu*year) , 101074 jobs<br>wallT fract=0.226, CPU eff=0.17   |

| sum last 30_days   |
|--|
| 184.0 (cpu*year) , 1028646 jobs<br>wallT fract=1.000, CPU eff=0.85 |
| 88.3 (cpu*year) , 158314 jobs<br>wallT fract=0.480, CPU eff=0.88   |
| 0.9 (cpu*year) , 40915 jobs<br>wallT fract=0.005, CPU eff=0.74     |
| 22.2 (cpu*year) , 129890 jobs<br>wallT fract=0.121, CPU eff=0.76   |

|                           |  |  |
|---------------------------|--|--|
| <b>lux : project</b>      | 0.1 (cpu*year) , 709 jobs<br>wallT fract=0.002, CPU eff=0.99     | 1.8 (cpu*year) , 8886 jobs<br>wallT fract=0.007, CPU eff=0.17    |
| <b>lz : project</b>       | 0.4 (cpu*year) , 1872 jobs<br>wallT fract=0.006, CPU eff=0.99    | 5.8 (cpu*year) , 381699 jobs<br>wallT fract=0.020, CPU eff=0.95  |
| <b>majorana : project</b> | 2.1 (cpu*year) , 98000 jobs<br>wallT fract=0.033, CPU eff=0.94   | 9.5 (cpu*year) , 173790 jobs<br>wallT fract=0.034, CPU eff=0.93  |
| <b>star : project</b>     | 20.7 (cpu*year) , 178198 jobs<br>wallT fract=0.329, CPU eff=0.89 | 82.1 (cpu*year) , 780320 jobs<br>wallT fract=0.291, CPU eff=0.90 |

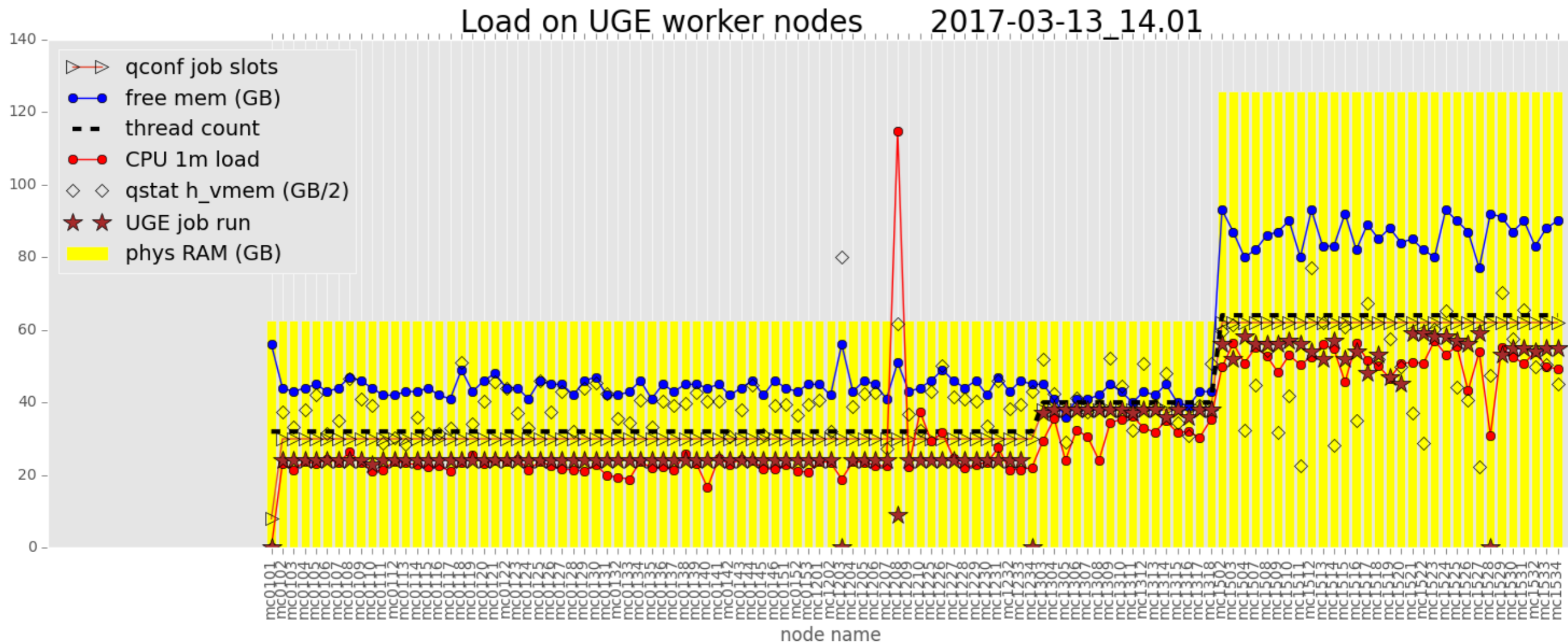
|  |
|--|
| 0.2 (cpu*year) , 956 jobs<br>wallT fract=0.001, CPU eff=1.00     |
| 3.4 (cpu*year) , 234461 jobs<br>wallT fract=0.018, CPU eff=0.92  |
| 6.2 (cpu*year) , 99870 jobs<br>wallT fract=0.034, CPU eff=0.91   |
| 62.6 (cpu*year) , 362855 jobs<br>wallT fract=0.340, CPU eff=0.83 |

Dayabay, LUX jobs run sub-optimal

More details: <http://portal.nersc.gov/project/mpccc/balewski/pdsfJobHistory/latest/>

# UGE CPU utilization

116 UGE nodes, 4578 job slots (potentially),  
3812 jobs run, cluster is 95% loaded (last Monday)



More details: <http://portal.nersc.gov/project/mpccc/balewski/ugeLoad/latest/>

# RAM/job distribution

## RAM/job < 1.5 GB

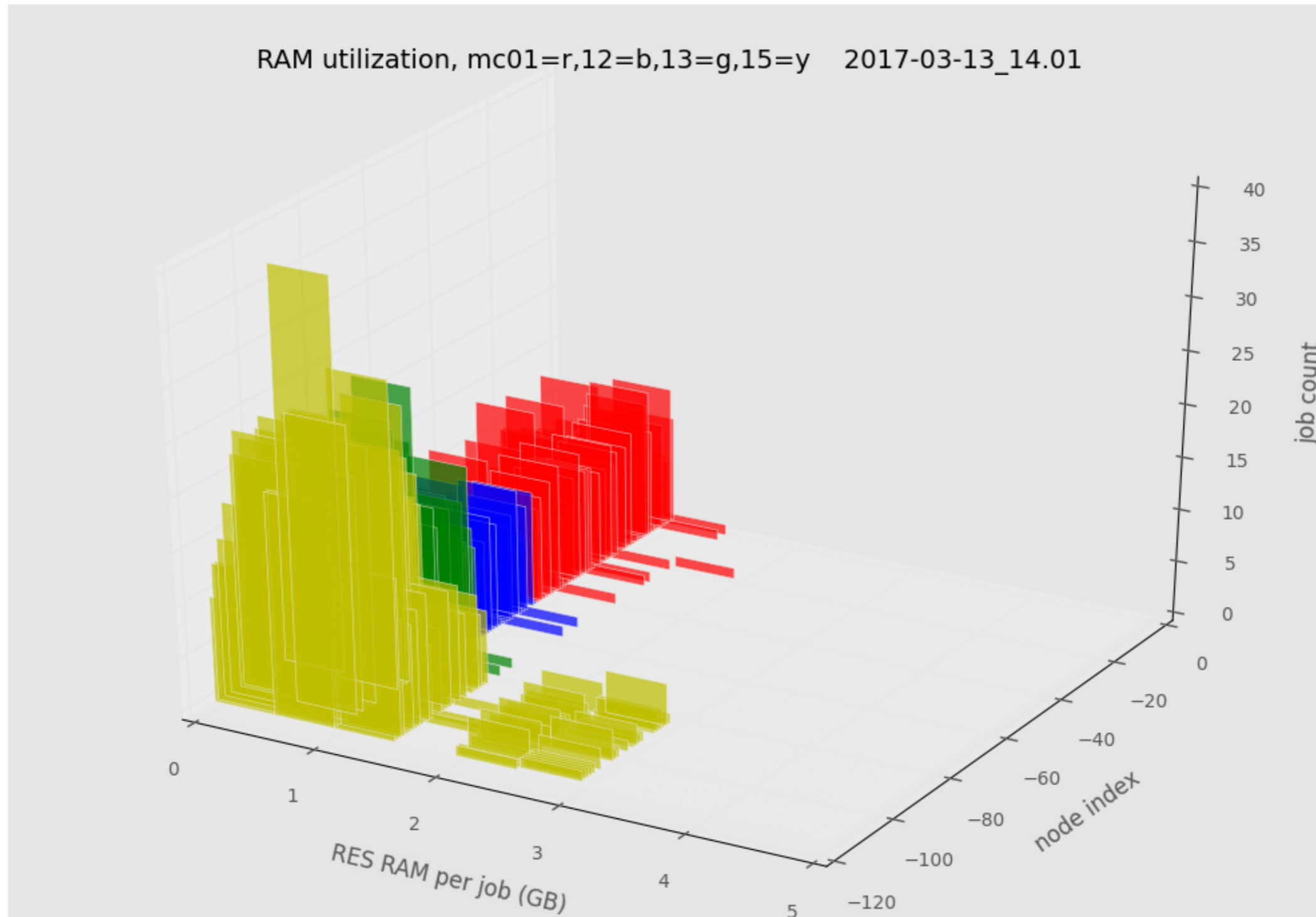
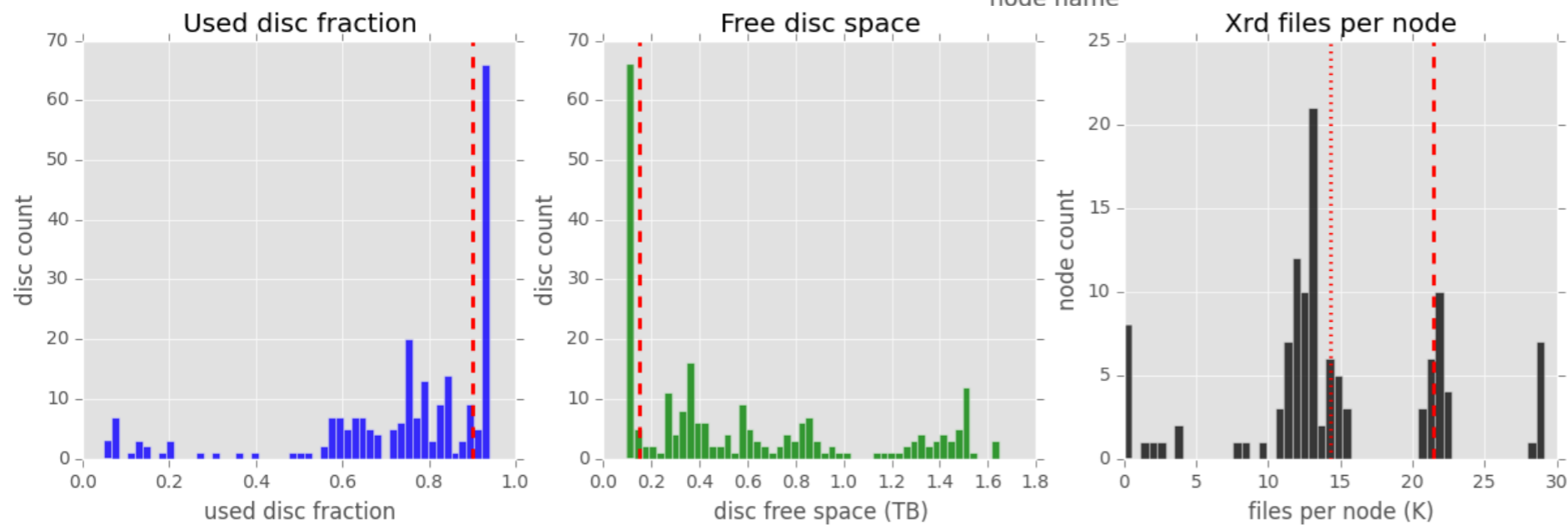
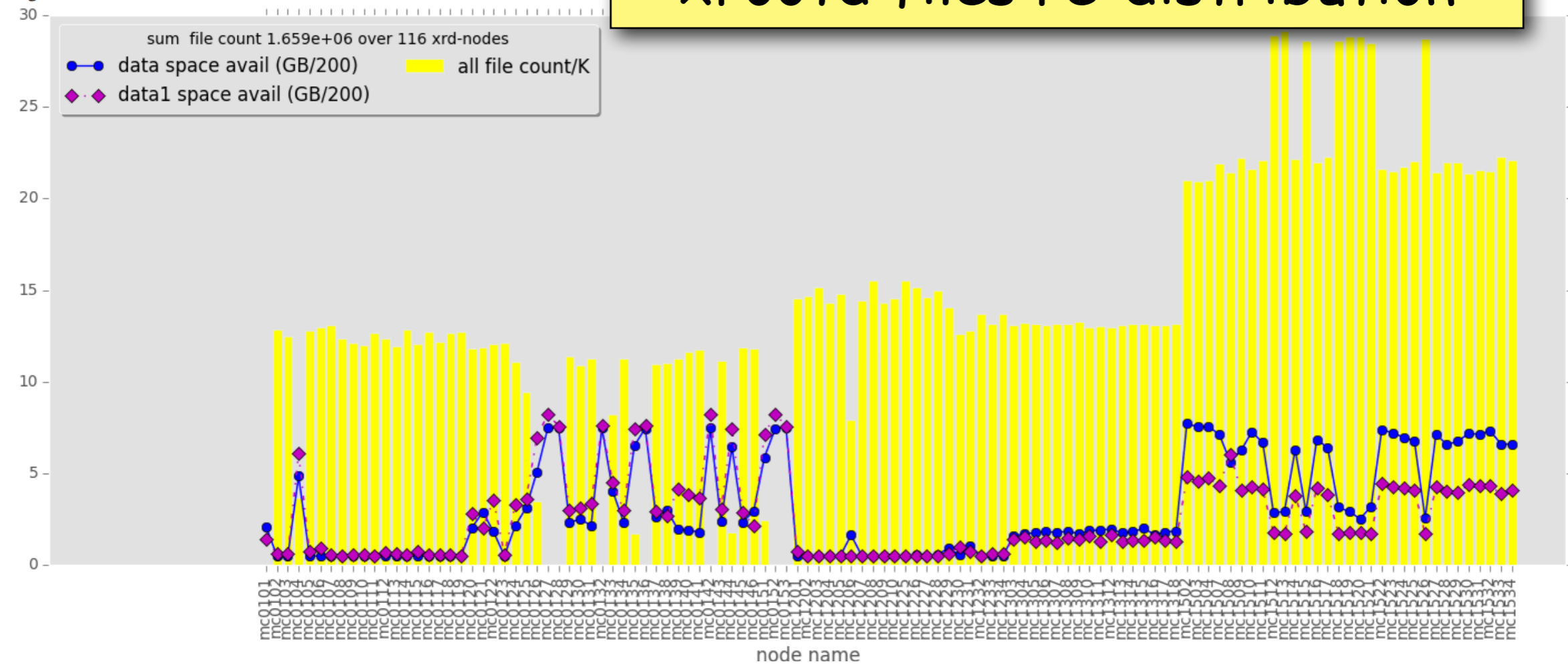


Fig.1 filesPerNode

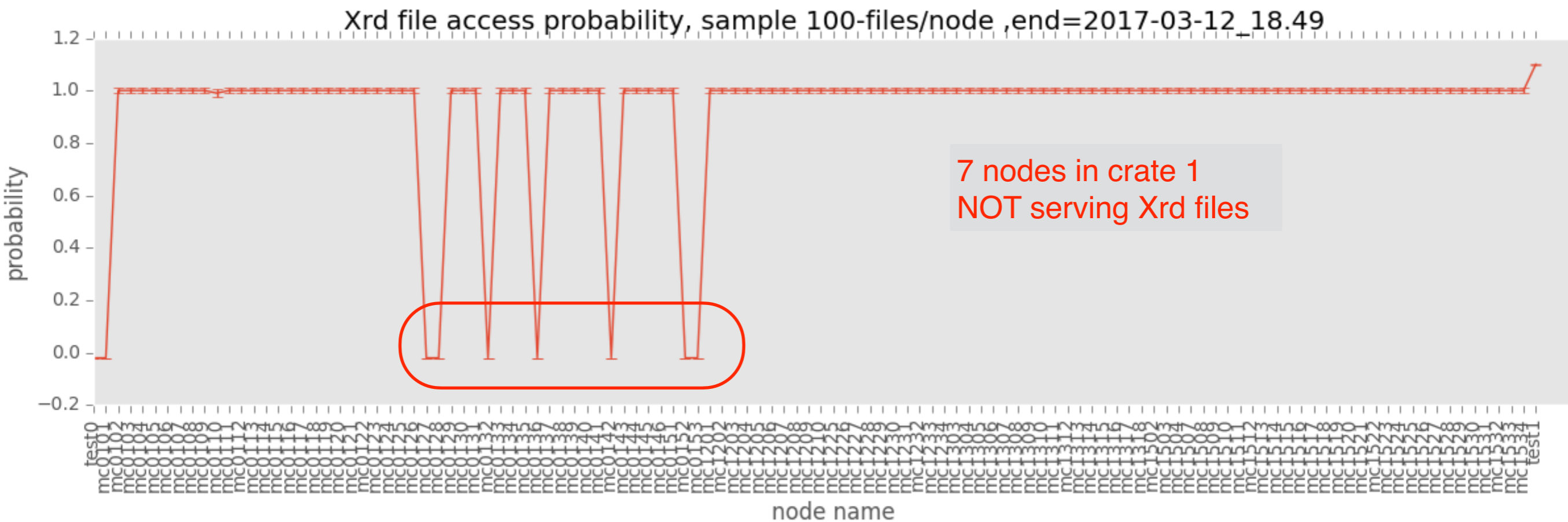


Only minor improvement since  
February → March  
41 → 38 nodes >90% occupied

Table produced on 2017-03-12\_18.49

| highDiscFract | lowFreeDisk |
|---------------|-------------|
| 38 nodes      | 38 nodes    |

# xrootd file availability



<http://portal.nersc.gov/project/mpccc/balewski/xrdLoad2/latest/>

# Announcements

Bi-weekly office hours 12:30 -2:30pm  
Thursday, March 16, 30, 59-4016-CR

PDSF user meeting

- Tuesday, April 12, 11am - 12pm, 59-3034-CR

Outages

Cori: Maintenance: March 21-23